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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,784	12/11/2001	Gunter W. Steinbach	10004402-1	1975

7590 11/14/2006  
AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

FILE, ERIN M

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

10

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/021,784		STEINBACH, GUNTER W.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Erin M. File		2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-28 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,10,29 and 34-37 is/are rejected.
- 7) ☒ Claim(s) 3,6-9,11 and 30-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 8/24/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, although Ruha does not explicitly disclose the received signal is a digital signal, Ruha does disclose the use of digital signals, and digital signals, their use and their reception are in the knowledge generally available to one of ordinary skill in the art.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 10, 29, 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruha et al.

**Claims 1, 29**, Ruha discloses a plurality of decision circuits (fig. 3, COMPN-1...COMP1) receive a received signal input (fig. 3, output 12) the sampling which occurs in the sigma delta modulator block 12 will cause a frequency which is a fraction of the received frequency (col. 5, lines 48-64). The Nyquist Shannon sampling theorem states that signals are sampled at a rate which is twice the frequency of the received signal. A fraction is defined as the quotient of two numbers, 2/1 meeting this limitation. Further Ruha discloses feedback circuitry for receiving the output signal of two or more of the decision circuits (fig. 3, input to 14) and this feedback signal is input through multiple DACs (col. 5, line 51, fig. 3, input 12B).

Ruha fails to disclose the received signal is a digital signal, however, Ruha does disclose the conversion of the analog signal to a digital signal. Because Ruha discloses the processing of a digital signal which meets the claims limitations, and because of the known advantage of using a digital signal in signal processing for speed and accuracy, it would be obvious to one skilled in the art at the time of invention to execute Ruha's disclosure in a digitally received signal.

**Claim 2**, Ruha further discloses summing the decision circuits in the quantizer (fig. 9, 14).

**Claim 4**, Ruha further discloses further the outputs of decision circuits  $COMP_{N-1}$ (fig. 3) are input to the quantizer (fig. 3, 14) and fed through the feedback channel (fig. 3, output 14, input to 12B).

**Claims 5, 35, 36**, Ruha further discloses the feedback circuitry comprises: a plurality of current steering switches Fig. 9, 24, col. 7, line 31), each current steering switch being driven by an output signal of a distinct decision circuit to pass a current therethrough based upon the value of the output signal of the corresponding decision circuit, each current steering switch (S3-S5) coupled to current summing (fig. 9, 14), the feedback signal being based upon an electrical characteristic of the summing node (fig. 9, output 14).

**Claims 10, 34, 37**, Ruha further discloses contain the limitations of Claims 5, 29, and 36 above, respectfully. Further Ruha discloses that the feedback signal is based upon decision circuits (see claim 1) that use a differential pair (col. 8, line 42).

***Allowable Subject Matter***

4. Claims 12-28 are allowed. The limitation of a plurality of comparator or decision circuits each responding to a different clock signal, which are further processed and used as feedback to the decision circuits is not found in the prior art of record.

5. Claims 3, 6-9, 11, 30-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

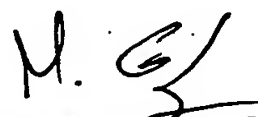
Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File

EMF

11/7/2006

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER